Appendix 17 to
Eleventh Amendment of
Master Service Agreement

June 25, 2012

Attachment to Data Center Services
Service Component Provider
Master Services Agreement
DIR Contract No. DIR-DCS-SCP-MSA-002

Between

The State of Texas, acting by and through
the Texas Department of Information Resources

and

Atos Governmental IT Outsourcing Services, LLC

Attachment 4-E
Service Tier Matrix

May 31, 2016

The Service Tier Matrix defines the services associated with each tier of service and the entry requirements for each tier of service. It is
not intended to modify, supersede or amend any other obligations described in other contract documents, including without limitation
Service Provider obligations related to Service Levels, Disaster Recovery, Security or storage.

Consolidated Data Center (ADC/SDC)
Tiered Offering

Notes:
As described in **Exhibit 4**, the Service Tier Matrix is used to categorize designated server category types into a three tier RU structure for support services. For clarity, Server Instance is the RU measure, not servers.
An Instance classified within a tier will receive the support services as defined by that tier. The level of support for these Instances is described here within the matrix, including the entry requirements, monitoring, storage requirements to enable disaster recovery objectives, and
service levels.
Platinum service is available by procuring two Gold instances and related hardware charges. There are no incremental charges to implement and support high availability (HA) software and any other architectural requirements necessary to provide HA.
Consolidated File/Print RU must meet the Gold tier offering metrics.
S = Standard: service provided within tier
O = Optional: can be added at additional cost as described in **Attachment 4-A**
X = Required element for entry to tier
 - = Not Available

Offerings:	Fully Managed				Semi-Managed	Definitions and Notes
	Not an RU Platinum	Gold	Silver	Bronze		
Service Levels						
Availability	99.95%/99.90%	99.92%/99.82%	99.88%/99.77%	99.80%/99.69%	99.50%/99.30%	
Incident Resolution Time - Severity 1	1h	2h	4h	6h	9bh	
Incident Resolution Time - Severity 2	2h	3h	6h	16h	27bh	
Root Cause Analysis Delivery	10bd	10bd	10bd	10bd	10bd	
Initiate Successful Recoveries	6h	24h	24h	24h	24h	
Monitoring						
Network Monitoring	S	S	S	S	-	Server IP ping with alerts
Hardware	S	S	S	S	-	Server (Up/Down, Hardware specific errors, component monitoring, CPU, Disk Memory, Components of a server)
Operating Level (OS)	S	S	S	S	-	Server Capacity Threshold Monitoring (CPU, Memory, filesystem and OS disk.
Database	S	S	S	O	-	DB up/down, DB free space, DB status, etc.
Application Software	S	S	O	O	-	Any process required to support the Application. Process Up/Down, URL website availability, application file system capacity and availability.
Middleware Processes	S	S	S	O	-	Process Up/Down, application file system capacity and availability where the standard tools are capable of such monitoring.
Capacity Utilization Reporting	S	S	*	*	-	Reports on key server resources, such as CPU, Memory, and Disk. *Available in Silver/Bronze on an interim basis to support Incident Resolution.
Capacity Management	S	S	*	*	-	Capacity management service that reports historical trends of key server resources. The service will also include monthly analysis by a Capacity Planner and requires business application owner participation. *Available in Silver/Bronze on an interim basis to support Incident Resolution.
Disk Storage						
Replicated data across sites	S	O *	O *	-	O	For Tier 1, mirroring means an async copy of any disk volume (LUN) stored on an ADC or SDC SAN device replicated for storage at the secondary data center (includes OS volumes as well as data disk). *Required with Class P or Class 1; optional otherwise.
Point in time copies	S	S	-	-	O	Initial point in time copy is provided by default, any additional PIT copies are at DIR request and follow standard policies for DIR request of disk storage.
High Availability Infrastructure Services						
Must pick one of the following or an appropriate combination:						
Instance Mobility (where supported by the technology)	S	*	*	*	-	*May be available in Gold/Silver/Bronze depending on the hardware platform chosen. Customer may have to purchase additional software.
Hardware Cluster	S	*	*	*	-	*May be available in Gold/Silver/Bronze depending on the hardware platform chosen. Customer may have to purchase additional software.
Hardware HA (warm site)	S	*	*	*	-	*May be available in Gold/Silver/Bronze depending on the hardware platform chosen. Customer may have to purchase additional software.
Database Clustering	S	*	*	*	-	*May be available in Gold/Silver/Bronze depending on the hardware platform chosen. Customer may have to purchase additional software.
Database Failover	S	*	*	*	-	*May be available in Gold/Silver/Bronze depending on the hardware platform chosen. Customer may have to purchase additional software.
Recovery Point Objective [Disaster Recovery]						Recovery Point Objective - the allowed amount of data lost.
1h	S	-	-	-	-	Requires data to be on SAN storage, with space available to async replication to secondary site.
6h	-	S	O *	-	-	Requires data to be on SAN storage, with space available to async replication to secondary site. *Optional for Silver if Tier 1 storage is used. DR Class 1 DR server(s) can have a Gold or Silver Service Tier
48h	-	S	S	S	-	Tape based recovery based on offsite tape shipping frequency. Class 2A, Class 2B, and Class 8 server(s) can have either a Gold or Silver Service Tier. DR Class 3, Class 4, Class 5, Class 6, and Class 7 server(s) can have Gold, Silver or Bronze Service Tier.
Security (3)						
Host Intrusion Detection (HIDS)	S	S	-	-	-	
Platform Support						Tickets entered outside of service window will be addressed next contracted support period.
24 x 7	S	S	-	-	-	
15 x 7 6AM - 9PM	-	-	S	-	-	
12 x 5 M-F 6AM - 6PM	-	-	-	S	-	
12 x 5 M-F 8AM - 5PM	-	-	-	-	S	
Entry Requirements for Service Tiers. **[Supportability for Disaster Recovery levels.]**						
Class P must have a fully documented disaster recovery plan including who can declare, escalation process, and work breakdown structure for recovery. An annual disaster recovery full exercise will be performed.	X	-	-	-	-	
Class 1 and Class 2A must have a fully documented disaster recovery plan including who can declare, escalation process, and work breakdown structure for recovery. An annual disaster recovery exercise (full recovery or table top) will be performed.	-	X	X	-	-	
Class 2B must have a fully documented disaster recovery plan including who can declare, escalation process, and work breakdown structure for recovery. An annual table top exercise will be performed.	-	X	X	-	-	
Class 3 must have a fully documented disaster recovery plan including who can declare, escalation process, and work breakdown structure for recovery. An annual enterprise table top exercise will be performed.	-	X	X	X	-	
Class 4 should have a documented disaster recovery plan. Disaster Recovery Exercises are not offered for Class 4.	-	X	X	X	-	
Class 5 must have a fully documented disaster recovery plan including who can declare, escalation process, and work breakdown structure for recovery. An annual disaster recovery exercise (full recovery or table top) will be performed.	-	X	X	X	-	
Class 6 and Class 7 must have a fully documented disaster recovery plan including who can declare, escalation process, and work breakdown structure for recovery. An annual tabletop exercise will be performed.	-	X	X	X	-	
Class 8 (existing SunGard contracts) should have a documented disaster recovery plan, including who can declare, escalation process, and work breakdown structure for recovery. An annual disaster recovery full exercise will be performed.	-	X	X	-	-	
DCS Customer will ensure the application is able to operate in a highly available (HA) manner and achieve failover within 1 hour. DCS Customer ensures connectivity to CDC's with appropriate capacity. SCP enables infrastructure failure heartbeat detection and failover initiation, and supplies and configures HA DNS, Load-balancing, Firewall, etc. components to support automatic failover. SCP also provides CDC to CDC network connectivity for the replication purposes.	X	-	-	-	-	
Production Application must have dev/test and pre-prod. There must be equivalent capacity and capability in an alternate data center to support DR.	X	-	-	-	-	
Production Application must have dev/test OS instances separate from production OS instances	X	X	X	-	-	
Online backup required (e.g. database hot-backup) to ensure concurrent backup without impact to availability	X	-	-	-	-	
Online backup or offline backups can be completed within the scheduled backup window.	-	X	-	-	-	
Offline backups can be completed within the scheduled backup window.	-	-	X	X	-	

The Service Tier Matrix defines the services associated with each tier of service and the entry requirements for each tier of service. It is not intended to modify, supersede or amend any other obligations described in other contract documents, including without limitation Service Provider obligations related to Service Levels, Disaster Recovery, Security or storage.

Non-Consolidated Data Centers
Tiered Offering

Notes:
As described in **Exhibit 4**, the Service Tier Matrix is used to categorize designated server category types into a three tier RU structure for support services. For clarity, Server Instance is the RU measure, not servers.
An Instance classified within a tier will receive the support services as defined by that tier. The level of support for these Instances is described here within the matrix, including the entry requirements, monitoring, storage requirements to enable disaster recovery objectives, and service levels.
S = Standard: service provided within tier
O = Optional: can be added at additional cost as described in **Attachment 4-A**
 - = Not Available

Offerings:	Fully Managed			Semi-Managed	Definitions and Notes
	Gold	**Silver**	**Bronze**	**Semi-Managed**	**Definitions and Notes**
Service Levels					
Availability	99.88%/99.77%	99.84%/99.73%	99.76%/99.64%	99.50%/99.30%	
Incident Resolution Time - Severity 1	3h	5h	8h	12bh	
Incident Resolution Time - Severity 2	4h	8h	24h	36bh	
Root Cause Analysis Delivery	10bd	10bd	10bd	10bd	
Initiate Successful Recoveries	24h	24h	24h	24h	Recovery initiated time based on once tape is on site
Monitoring					
Network Monitoring	S	S	S	-	Server IP ping with alerts
Hardware	S	S	S	-	Server (Up/Down, Hardware specific errors, component monitoring, CPU, Disk Memory, Components of a server)
Operating Level (OS)	S	S	S	-	Server Capacity Threshold Monitoring (CPU, Memory, filesystem and OS disk).
Database	S	S	O	-	DB up/down, DB free space, DB status, etc.
Application Software	S	O	O	-	Any process required to support the Application. Process Up/Down, URL website availability, application file system capacity and availability.
Middleware Processes	S	S	O	-	Process Up/Down, application file system capacity and availability where the standard tools are capable of such monitoring.
Capacity Utilization Reporting	S	*	*	-	Reports on key server resources, such as CPU, Memory, and Disk. *Available in Silver/Bronze on an interim basis to support Incident Resolution.
Capacity Management	S	*	*	-	Capacity management service that reports historical trends of key server resources. The service will also include monthly analysis by a Capacity Planner and requires business application owner participation. *Available in Silver/Bronze on an interim basis to support Incident Resolution.
High Availability Infrastructure Services					
Cluster/HA/Failover	-	-	-	-	Not available at Non-Consolidated Service Centers as standard services.
Recovery Point Objective					Recovery Point Objective - the allowed amount of data lost.
48h	S	S	S *	-	Tape based recovery based on offsite tape shipping frequency. * Bronze Service Tier is for Class 2B, 3 and 4
Security					
Host Intrusion Detection (HIDS)	S	-	-	-	
Platform Support					Tickets entered outside of service window will be addressed next contracted support period.
24 x 7	S	-	-	-	
15 x 7 6AM - 9PM	-	S	-	-	
12 x 5 M-F 6AM - 6PM	-	-	S	-	
12 x 5 M-F 8AM - 5PM	-	-	-	S	

The Service Tier Matrix defines the services associated with each tier of service and the entry requirements for each tier of service.
It is not intended to modify, supersede or amend any other obligations described in other contract documents, including without
limitation Service Provider obligations related to Service Levels, Disaster Recovery, Security or storage.

Cloud Data Centers
Tiered Offering

<u>Notes:</u>
As described in <u>**Exhibit 4**</u>, the Service Tier Matrix is used to categorize designated server category types into a three tier RU structure for support services. For clarity, Server Instance is the RU measure, not servers.
An Instance classified within a tier will receive the support services as defined by that tier. The level of support for these Instances is described here within the matrix, including the entry requirements, monitoring, storage requirements to enable disaster
recovery objectives, and service levels.

S = Standard: service provided within tier

O = Optional: can be added at additional cost as described in <u>**Attachment 4-A**</u>

 - = Not Available

Offerings:	Fully Managed			Semi-Managed	Definitions and Notes
	Gold	**Silver**	**Bronze**	**Semi-Managed**	
Service Levels					
Availability	99.88%/99.77%	99.84%/99.73%	99.76%/99.64%	99.50%/99.30%	
Incident Resolution Time - Severity 1	3h	5h	8h	9bh	
Incident Resolution Time - Severity 2	4h	8h	24h	27bh	
Root Cause Analysis Delivery	10bd	10bd	10bd	10bd	
Initiate Successful Recoveries	24h	24h	24h	24h	Recovery initiated time based on once tape is on site
Monitoring					
Network Monitoring	S	S	S	-	Server IP ping with alerts
Hardware	S	S	S	-	Server (Up/Down, Hardware specific errors, component monitoring, CPU, Disk Memory, Components of a server)
Operating Level (OS)	S	S	S	-	Server Capacity Threshold Monitoring (CPU, Memory, filesystem and OS disk).
Database	S	O	O	-	DB up/down, DB free space, DB status, etc.
Application Software	S	O	O	-	Any process required to support the Application. Process Up/Down, URL website availability, application file system capacity and availability.
Middleware Processes	S	S	O	-	Process Up/Down, application file system capacity and availability where the standard tools are capable of such monitoring.
Capacity Utilization Reporting	S	*	*	-	Reports on key server resources, such as CPU, Memory, and Disk. *Available in Silver/Bronze on an interim basis to support Incident Resolution.
Capacity Management	S	*	*	-	Capacity management service that reports historical trends of key server resources. The service will also include monthly analysis by a Capacity Planner and requires business application owner participation. *Available in Silver/Bronze on an interim basis to support Incident Resolution.
High Availability Infrastructure Services					
Cluster/HA/Failover	-	-	-	-	Not available at Non-Consolidated Service Centers as standard services.
Recovery Point Objective					Recovery Point Objective - the allowed amount of data lost.
48h	S	S	S *	-	Tape based recovery based on offsite tape shipping frequency. * Bronze Service Tier is for Class 2B, 3 and 4
Security					
Host Intrusion Detection (HIDS)	S	-	-	-	
Platform Support					Tickets entered outside of service window will be addressed next contracted support period.
24 x 7	S	-	-	-	
15 x 7 6AM - 9PM	-	S	-	-	
12 x 5 M-F 6AM - 6PM	-	-	S	-	
12 x 5 M-F 8AM - 5PM	-	-	-	S	

The Service Tier Matrix defines the services associated with each tier of service and the entry requirements for each tier of service. It is not intended to modify, supersede or amend any other obligations described in other contract documents, including without limitation Service Provider obligations related to Service Levels, Disaster Recovery, Security or storage.

Storage Entry Requirements for Disaster Recovery in Consolidated Data Centers

Tier 1   - Storage   Fast i/o optimized: Data is replicated to the alternate CDC site allowing for the fastest recovery
Tier 2   - Storage   Medium i/o optimized: Data is NOT replicated; media or equivalent based recovery
Tier 3   - Storage   Low i/o limited: Data is NOT replicated; media or equivalent based recovery
Tier 3R - Storage   Low i/o limited: Data is replicated at an alternate site
Tier 4   - Low performance Storage - static or infrequently used data

		Service Tiers			
		Platinum	**Gold**	**Silver**	**Bronze**
Storage Tier	Tier 1[1]	CP[5]	C1[7]	C1[7]	NA[6]
	Tier 2[2]	NA[6]	C2A, C2B[8], C3[8], C4[8], C6 or C8[8]	C2A, C2B[8], C3[8], C4[8], C6 or C8[8]	C3[8], C4[8] or C6
	Tier 3[3]	NA[6]	C6, C7	C6, C7	C6, C7
	Tier 3R[4]	NA[6]	C5	C5	C5
	Tier 4	NA[6]			

Rules for Combinations and Legend
(1) Fast replicated Storage to Fast Storage Data is replicated to the alternate CDC site allowing for the fastest recovery Recommended for any production application with time critical availability
(2) Non replicated Fast Storage Data is NOT replicated; media or equivalent based recovery Target server has at least the amount of storage as the source Billing occurs for Tier 2 storage at both datacenters
(3) Storage at the primary location can be used for only non transactional data and approved by Xerox Data is NOT replicated; media or equivalent based recovery Storage at the alternate location is repurposed on either fast or slow storage Target storage capacity must be at least as large as source
(4) Storage at the primary location can be used for only non transactional data and approved by Xerox Data is replicated at an alternate site Storage at the alternate location is repurposed on either fast or slow storage Target storage capacity must be at least as large as source
(5) Tier 1 Storage is required for Platinum support and Platinum DR
(6) Storage Tier not available for the corresponding Service Tier
(7) Tier 1 Storage is required for Class 1
(8) Storage Tier available at CDC or LDC

The Service Tier Matrix defines the DR services available with each tier of service and the entry requirements for each tier of service. It is not intended to modify, supersede or amend any other obligations described in other contract documents, including without limitation Service Provider obligations related to Service Levels, Disaster Recovery, Security or storage.

Disaster Recovery

Consolidated Data Centers

	Platinum	Gold	Silver	Bronze		Disaster Recovery Exercises	Disaster Recovery RUs
Disaster Recovery - RTO					Recovery Time Objective - time to restore systems after the disaster has been declared		
Class P: 1h	S	-	-	-	Application and Infrastructure must support hot standby and semi-automated failover between sites. Requires 2 gold servers.	Full Recovery Exercise	When CMDB DR Class = Class P, then Fiscal Year commitment for the Full Recovery Exercise RU
Class 1: 72hrs	-	S	S	-	Target server is repurposed during a disaster event. Replicated Tier 1 storage is used to restore target server and data.	Full Recovery Exercise	When CMDB DR Class = Class 1, then Fiscal Year commitment for the Full Recovery Exercise RU
Class 2A: 7d	-	S	S	-	Media based recovery. Target server and target storage are repurposed during a disaster event. Target storage data is replaced with recovery data.	DCS Customer Tabletop Exercise or Full (upon request during annual planning cycle)	When CMDB DR Class = Class 2A, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU unless DCS Customer requests a Full Recovery Exercise (then Full DR RU)
Class 2B: 14d	-	S	S	-	Media based recovery. Target server and target storage are repurposed during a disaster event. Target storage data is replaced with recovery data.	DCS Customer Tabletop Exercise	When CMDB DR Class = Class 2B, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU
Class 3: 21d	-	S	S	S	Media based recovery. Target server and storage are acquired as needed at the time of disaster.	Enterprise Tabletop Exercise or DCS Customer Tabletop Exercise (upon request during annual planning cycle)	When CMDB DR Class = Class 3, then DR RUs will not be incurred for the Enterprise Tabletop Exercise. If DCS Customer requests a DCS Customer Tabletop Exercise, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU
Class 4: Low Priority	-	S	S	S	Data is saved for future/best effort recovery.	Disaster Recovery Exercises are not offered for Class 4 (no RTO)	When CMDB Class = Class 4, then DR RUs will not be incurred. DCS Customers may revise the DR Class to become eligible for Disaster Recovery Exercises.
Class 5: 7d	-	S	S	S	Non- Transactional Data only. Target server is repurposed during a disaster event. Replicated Tier 3 storage is used to restore target server and data.	DCS Customer Tabletop Exercise or Full (upon request during annual planning cycle)	When CMDB DR Class = Class 5, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU unless DCS Customer requests a Full Recovery Exercise (then Full DR RU)
Class 6: 14d	-	S	S	S	Non- Transactional Data only. Media based recovery. Target server is repurposed during a disaster event. Target storage is non-replicated preallocated slow storage.	DCS Customer Tabletop Exercise	When CMDB DR Class = Class 6, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU
Class 7: 14d	-	S	S	S	Non- Transactional Data only. Media based recovery. Target server is repurposed during a disaster event. Target storage is non-replicated repurposed slow/fast storage.	DCS Customer Tabletop Exercise	When CMDB DR Class = Class 7, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU
Class 8: per contract	-	S	S	-	Existing SunGard contracts only.	Full Recovery Exercise	When CMDB DR Class = Class 8, then Fiscal Year commitment for the Full Recovery Exercise RU

Potential Combinations of Support Tiers and DR				
Consolidated Data Centers				
		Service Support Tier		
	Platinum	Gold	Silver	Bronze
Class P (1 hour)	Available	N/A	N/A	N/A
Class 1 (72 hours)	N/A	Available	Available	N/A
Class 2A (7 days)	N/A	Available	Available	N/A
Class 2B (14 days)	N/A	Available	Available	N/A
Class 3 (21 days)	N/A	Available	Available	Available
Class 4[1] (Best Effort)	N/A	Available	Available	Available
Class 5[2] (7 days)	N/A	Available	Available	Available
Class 6[2] (14 days)	N/A	Available	Available	Available
Class 7[2] (14 days)	N/A	Available	Available	Available
Class 8[3] (per contract)	N/A	Available	Available	N/A

(DR Class)

Non-Consolidated Data Centers

	Platinum	Gold	Silver	Bronze		Disaster Recovery Exercises	Disaster Recovery RUs
Disaster Recovery - RTO					Recovery Time Objective - time to restore systems after the disaster has been declared		
Class 2B: 14d	-	S	S	S	Media based recovery. Target server and target storage are repurposed during a disaster event. Target storage data is replaced with recovery data.	DCS Customer Tabletop Exercise	When CMDB DR Class = Class 2B, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU
Class 3: 21d	-	S	S	S	Media based recovery. Target server and storage are acquired at the time of disaster.	Enterprise Tabletop Exercise or DCS Customer Tabletop Exercise (upon request during annual planning cycle)	When CMDB DR Class = Class 3, then DR RUs will not be incurred for the Enterprise Tabletop Exercise. If DCS Customer requests a DCS Customer Tabletop Exercise, then Fiscal Year commitment for the DCS Customer Tabletop Exercise RU
Class 4:	-	S	S	S	Data is saved for future/best effort recovery.	Disaster Recovery Exercises are not offered for Class 4 (no RTO)	When CMDB Class = Class 4, then DR RUs will not be incurred. DCS Customers may revise the DR Class to become eligible for Disaster Recovery Exercises.
Class 8: per contract	-	S	S	-	Existing SunGard contracts only.	Full Recovery Exercise	When CMDB DR Class = Class 8, then Fiscal Year commitment for the Full Recovery Exercise RU

Non-Consolidated Data Centers				
		Service Support Tier		
	Platinum	Gold	Silver	Bronze
Class 2B (14 days)	N/A	Available	Available	N/A
Class 3 (21 days)	N/A	Available	Available	Available
Class 4	N/A	Available	Available	Available
Class 8[3] (per contract)	N/A	Available	Available	N/A

(DR Class)

Rules for Combinations and Legend
Support Tier and DR Level combination is available
Support Tier and DR Level combination is NOT available
(1) Class 4 level items will be recovered in a disaster on a best effort basis regardless of Service Tier.
(2) May have server performance degradation; Slow disk performance - not recommended for transactional data. Agency Assumes the risk that the application will provide acceptable performance on slower disk.
(3) Existing SunGard contracts only